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FISH AND WILDLIFE SERVICE

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Memorandum

To: Deputy Manager, California/Nevada Operations Office, Sacramento, California

From: Field Supervisor, Ventura Fish and Wildlife Office, Ventura, California
/s/ Carl Benz (acting)

Subject: Biological Opinion for the Issuance of an Incidental Take Permit for the Hyundai Automotive Test Track Facility, California City; Kern County, California (1-8-04-FW-3)

This document transmits the U.S. Fish and Wildlife Service's (Service) biological opinion regarding the issuance of incidental take permits (ITPs) to the Hyundai Motor America (Hyundai) and the City of California City (City) for implementation of the Habitat Conservation Plan for the Hyundai Automotive Test Track Facility (HCP). Issuance of the ITPs is pursuant to section 10(a)(1)(B) and section 7(a)(2) of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.) (Act). The Service proposes to issues the ITPs to Hyundai and the City for a period of 30 years.

The Applicants are requesting coverage of incidental take under the ITPs for the federally threatened desert tortoise (*Gopherus agassizii*). No other species are covered by the ITPs.

The biological opinion was prepared using information from the following documents: (1) the July 2003 Draft Environmental Assessment/Habitat Conservation Plan and Appendices (DEA/HCP) (Sapphos 2003), (2) the December 2003 Final Environmental Assessment/Habitat Conservation Plan and Appendices (FEA/HCP)(Sapphos 2004), (3) the July 2003 Draft Implementing Agreement, and (4) various other published agency and academic literature and information in the Service's files. The complete administrative record for this consultation is on file at the Service's Ventura Fish and Wildlife Office.

BIOLOGICAL OPINION

DESCRIPTION OF THE PROPOSED ACTION

The Service proposes to issue incidental take permits to, and enter into an implementing agreement with, Hyundai and the City for the implementation of the HCP for the Hyundai

Automotive Test Course Project. The HCP is designed to allow limited development on 4526.5 acres in the West Mojave Desert within the city limits of California City while conserving 3386.5 acres of habitat in perpetuity for the federally threatened desert tortoise. The HCP also includes measures to minimize the injury and mortality to the desert tortoise at the project site and a translocation program. As part of the translocation program, desert tortoises would be translocated from the project site to habitat managed for the desert tortoise and conserved in perpetuity. The program also includes multi-year monitoring of translocated and resident desert tortoises at the translocation site(s) and desert tortoises at a control site. The purpose of the HCP is to promote biological conservation in conjunction with economic development in the areas covered by the ITPs. The HCP establishes a species conservation program to minimize and mitigate the expected loss of habitat values and incidental take of the desert tortoise.

The biological goals of the HCP are to enhance the long term viability of the desert tortoise in the region of the proposed project to enhance the probability of the recovery of the species. The biological objectives of the HCP are to:

- Increase the area of protected and conserved habitat for the desert tortoise in the region of the proposed project;
- Enhance the value of the protected and conserved habitat for the desert tortoise;
- Provide for the maintenance of the protected and conserved habitat for the desert tortoise in perpetuity; and
- Avoid and minimize direct take of desert tortoise from project construction and operation.

Hyundai and the City will each be required to mitigate the impacts of their own covered activities. Therefore, because they have separate permits and are mitigating their impacts separately, if either one of the permits is revoked, the other permit would remain in effect.

Hyundai and the City are seeking take coverage for effects to the desert tortoise associated with the construction and operation of an automotive test track facility (Facility). The proposed Facility is located approximately 0.5 mile north of State Highway 58, east of the town of Mojave in California City, Kern County, California on a 4,498 acre site. The proposed Facility will test and evaluate the safety, performance, and handling of concept, prototype, and production automobiles manufactured by Hyundai at its Birmingham, Alabama plant. Ancillary features include constructing a paved access road from Highway 58 to the proposed project site (8.5 acres), and installing an extension of the City water line to the project site (20 acres). A map delineating the location and juxtaposition of these facilities is located in the FEA/HCP (Figure 2.1-1, Sapphos 2004). Development would occur on Bureau of Land Management (Bureau) designated Category III (Bureau 1999) desert tortoise habitat. Therefore, the proposed project is anticipated to affect a total of 4,526.5 acres of desert tortoise habitat.

Compensation of Habitat

Hyundai proposes to acquire 3,386.5 acres as compensation, and to translocate desert tortoise from the project site to acquired lands pursuant to the translocation plan described in the FEA/HCP (Sapphos 2004).

The Service's ITPs would authorize take of the desert tortoise incidental to the construction and operation of the test track and associated facilities, (including the access road and water line), and the desert tortoise translocation plan. The FEA/HCP for the Hyundai test track contains a full project description of the proposed actions. The implementing agreement would establish the obligations of all involved parties for the implementation of the HCP. The covered activities for which Hyundai and the City are requesting authorization for incidental take under section 10(a)(1)(B) of the Act are described below and in the FEA/HCP.

Hyundai Test Track and Associated Facilities

Development of the proposed Facility will occupy approximately six sections of land to accommodate the 6.4-mile-long oval test course. Construction of the proposed facility is planned to occur in two phases. Phase 1 consists of installation of the 6.4-mile oval track, a spanning bridge over the oval track, a southern access road, a security and desert tortoise fence, a support building and associated utilities, a Hill-Up Road and a 2-mile water line. Phase 2 consists of the installation of the vehicle dynamic area (VDA), winding track, a 12-lane special surface area, four-lane vehicle stability testing area, and a choppy road.

The paved access road off Highway 58, approximately 2 miles in length, would be constructed from Post Mile 120.99, along the Section line located approximately 0.84 mile west of the existing access from Highway 58. This access road would be constructed outside of the proposed project boundaries and would connect the proposed project to Highway 58. The proposed access road location provides an existing paved crossover with eastbound and westbound left turn lanes on Highway 58, in addition to adequate sight distances and a longer median crossover. The access road will include desert tortoise exclusion fencing.

Prior to commencement of Facility operation, chain-link security and safety fencing will be constructed around the oval track. Fencing will be composed of standard chain-link fencing 8 feet in height, with 8-foot spacing between posts. Entry gates would be provided in the fence at the designated road entry point for the oval test course, and at three specified points along the oval test track. The three additional gates would be used only by authorized personnel for situations that require rapid access to the interior of the oval test track.

City Water Line Extension

The City is proposing to construct a paved access road and extend a water pipeline to the northeast corner of the proposed project site by improving two miles of Joshua Tree Boulevard (California City Access Road). This access road would run from the northeast corner of the proposed project site, extending east along the Section line for a distance of approximately 2 miles to join the existing roadway system at the intersection of Joshua Tree Boulevard and

Airway Boulevard (see attached map). The existing unimproved 12 foot-wide Joshua Tree Boulevard would be improved to an asphalt-paved road 24 feet in width, 12 feet on each side of the proposed center line, resulting in 12 feet of new grading for the road improvement on each side of the existing roadway. An additional 18 feet of graded shoulder would be constructed on each side of the road. The remaining portion of the street right-of-way (approximately 25 feet on each side) would remain undisturbed, except for that section temporarily disturbed for the installation of the water pipeline. The ultimate street right-of-way dedication would be 110 feet. The improvements to Joshua Tree Boulevard would provide access for emergency vehicles to the Facility. The 2-mile water line extension will be buried, will not include any water valves or hydrants, and will service only the proposed project. There are currently no plans for additional projects along the water pipeline and road extension. The proposed water line extension would run 38 feet south of the proposed center line of the Joshua Tree Boulevard right-of-way. The line would consist of 14-inch high-density plastic pipe, pursuant to City and fire department standards. A permanent access road along the water pipeline would not be needed. At least 25 feet from the north edge of the graded shoulder to the north of the proposed road way would not be graded as a part of this project. The City will have responsibility for construction and maintenance of the water line extension, and for mitigation of all impacts associated with the water line extension.

DESERT TORTOISE MINIMIZATION MEASURES

Hyundai and the City will incorporate the following measures to minimize and mitigate to the maximum extent practicable the impact of the incidental take of desert tortoise.

Preconstruction Measures

All proposed construction work areas will be staked (clearly marked), a worker education program would be implemented, and preconstruction surveys to identify inactive and active desert tortoise burrows within the proposed project site will be conducted. Staking will be verified by a biological monitor. “Authorized biologist” or “biological monitor” is a person or persons working pursuant to MOUs and Section 10(a) permits issued for the proposed project by the California Department of Fish and Game (Department) and Service. A “monitor” is a person or persons with education and experience in working with desert tortoise, but who has no authority to handle a desert tortoise.

All proposed construction staging areas, parking areas, and project elements will be surveyed and clearly flagged by a registered surveyor prior to the initiation of preconstruction surveys. Temporary desert tortoise exclusion fencing will be constructed around the oval track and all construction sites prior to initiation of construction activities. This fence would be connected to metal poles staked into the ground. Temporary desert tortoise exclusion fencing will be constructed prior to initiating any ground-disturbing activity within an area of the proposed project site. All construction staging will be undertaken in areas of lower quality habitat or areas that exhibit signs of disturbance. All staging areas and fencing will be inspected and approved

by an authorized biologist prior to the initiation of construction activities. The temporary desert tortoise exclusion fencing will be inspected weekly and after storm events accompanied by

surface flow. Temporary exclusion fencing will remain in place until the entire project site has been cleared and the desert tortoise exclusion fencing around the perimeter of the site has been installed.

The permanent desert tortoise exclusion fence will be installed around the perimeter of the Hyundai property. The installation will be separate from the permanent security fence around the perimeter of the property, and the two fences will be designed to ensure that they do not impede movement of other wildlife species. The fences will be designed to inhibit birds that prey on desert tortoises from perching on their components. To prevent birds from perching on fence posts, fence posts would be topped with nixalite, sharp, intertwined, stainless steel spikes standing at upward angles, with an upright, 8-inch metal spike welded in the center of each fencepost. To prevent birds from perching on the fencing, two flexible wires would be loosely strung between the metal spikes on the fence posts, with one wire approximately 3 inches above the top of the fence, and the other wire approximately 8 inches above the fence.

The permanent desert tortoise fencing will be built to specifications agreed to by the Service and the Department and would be constructed of galvanized narrow mesh hardware cloth, sunk up to 12 inches below the surface of the ground, and rise a minimum of 18 inches above the surface of the ground.

An authorized biologist will develop and administer a worker education program for all construction personnel. Construction crews, foremen, contractors, subcontractors and other personnel potentially working on the proposed project site will complete the education program to familiarize themselves with the particular biological restrictions and conditions of the area.

Practices and information covered by this program will include speed limits, firearm prohibition, encounters with desert tortoise, staying within designated construction areas, pet prohibition, agency notification, checking under vehicles, trash and litter management, training on special status species within the project area, species and habitat identification, techniques to avoid impacts to species, consequences of taking a listed species, and reporting procedures when encountering listed or sensitive species. An incentive program will be implemented into the worker education program to encourage on-site workers to report observations of desert tortoise to an authorized biologist. The text of the worker education program will be submitted to the Service and the Department at least 10 working days prior to the initiation of construction.

Workers will receive a sticker or certificate that they have completed the desert tortoise awareness training. A construction monitoring notebook will be maintained on site throughout the construction period and will include, at a minimum, a copy of the Section 10(a) permit for incidental take, a copy of the California Endangered Species Act Section 2081(b) incidental take permit, the Habitat Conservation Plan, the Mitigation Monitoring and Reporting Plan adopted by

the City, and a list of signatures for all personnel who have successfully completed the worker education program. The authorized biologist will demonstrate compliance with this measure by sending a copy of the education program and a copy of the construction monitoring notebook, including a list of the names of workers who have completed the required worker education program, to the Service and the Department on an annual basis.

Preconstruction surveys will be undertaken in three phases: (1) the oval track and oval track interior, which would then be surrounded by temporary desert tortoise exclusion fencing; (2) the alignment of the perimeter desert tortoise exclusion and safety fencing; and (3) the remainder of the project site. The authorized biologist will submit proof of compliance with this measure, including a survey report, to the Service and Department.

All desert tortoise burrows, as well as large mammal burrows that could be used by desert tortoise, will be flagged in work, staging and construction areas, rights-of-way within the proposed project site and the water line extension site. Inactive burrows will be collapsed within those areas. Recovery and relocation of desert tortoises encountered during preconstruction surveys will be performed in accordance with the Translocation Program.

Desert Tortoise Translocation

To minimize impacts to desert tortoises, an authorized biologist will translocate all desert tortoise encountered within the proposed project site in accordance with the Translocation Program (Karl 2003). The primary goals of translocating desert tortoises from the Hyundai site to an approved translocation site are to study ways to prevent the mortality of desert tortoises that reside on the project site, and to provide for long term viability of desert tortoise in the population which will maintain breeding individuals in the regional population. The Translocation Program includes a research component that is designed to answer questions regarding the effects of translocation on the health, behavior, and survival of the translocated and host or resident desert tortoises. The Translocation Program will include a study of the effects of the translocation on the translocated animals and the resident population. For comparison, a control population will also be studied.

The Hyundai Translocation Program will incorporate the translocation of seronegative and seropositive desert tortoises, animals that have withstood infection by *Mycoplasma agassizii,* and recovered; that is, they exhibit no clinical signs of disease. Previous studies have included only seronegative animals; seropositive desert tortoises have been adopted and thus have been removed and permanently lost from the wild population. *Mycoplasma agassizii* has been identified as a cause of upper respiratory tract disease. By studying the behavior and survival of seropositive desert tortoises that have been translocated, the Service will gain key information on whether the desert tortoises that survived the stress of infection will also survive the stress of translocation. If the desert tortoises survive, the physical, physiological, and genetic adaptations of these animals will remain in the population to be passed on to future generations of wild desert tortoises.

The translocation area would be either a two-square mile site or two one-square mile sites. Prior to translocation, translocation site(s) will be fenced with desert tortoise-proof fencing. One of the research questions addressed in the Translocation Program is whether seropositive desert tortoises that host *Mycoplasma* spp. will be under sufficient stress following translocation to enter an acute phase of the infection (*i.e.*, exhibit clinical signs). Because desert tortoises are believed to be contagious when clinically ill (Brown *et al*. 2003), fencing will prevent potential infection of desert tortoises outside the translocation site. Another benefit from fencing the translocation site is to enhance the probability that they will become accustomed to the site, thus, maximizing the likelihood of their ultimate repopulation of that area, when the fence is removed in two to three years.

The following criteria have been identified as necessary for the translocation site to maximize the success of the translocation effort. The habitat at the translocation site will be of sufficiently high quality to support both translocated and resident desert tortoises. The site will be of sufficient size to accommodate an influx of translocated tortoises. The site will be within the same population as the Hyundai site to maintain genetic, morphological and behavioral integrity and facilitate acclimation by the translocatees. Prior to selecting the translocation site, desert tortoise experts will survey potentially suitable sites to ensure that these sites meet the criteria mentioned above for translocation. These experts will implement survey methods, and will analyze the data collected to assess tortoise abundance, habitat features, existing anthropogenic influences, and anticipated future impacts.

The site will be managed in perpetuity for the conservation of the desert tortoise.

Appropriate areas for a control site will be assessed simultaneously, using the same survey methods as for the translocation site. The control site will be near the translocation site, and of similar elevation, soils, and habitat.

No translocation site has been selected, although this will need to be accomplished in sufficient time to enable the site to be fenced prior to translocating desert tortoises in April 2004. The site will be located northwest of the Hyundai project site and east and south of the Desert Tortoise Research Natural Area (DTRNA) near California City.

The translocation site will be fenced along the perimeter with temporary desert tortoise-proof fencing. To deter trespass by recreationists, livestock, or others, at least two strands of barbed wire will be strung above the desert tortoise-proof fencing. The fence will be installed as a management tool to assess the success of site repatriation and incorporation of translocated desert tortoises into the host population. Site repatriation will be assessed by monitoring subsequent desert tortoise movements and comparing them to those of control desert tortoises. The desert tortoise-proof portion of the fencing will be removed when animals seem to have settled into the area *(i.e.*, ceased fence-walking and have behaviors similar to the control and host groups).

Desert tortoises that are determined to have clinical signs of disease will not be moved from the proposed project site. Rather, they will be moves to an area in the northwest portion of the

Hyundai property. This location will be permanently fenced with desert tortoise fencing and will be designated as a holding area for ill animals. If the animals recover, they could be moved to the translocation site. If they do not recover, they will be placed in adoption or research status.

Construction and Operations Avoidance Measures

An authorized biologist will survey all work, staging and construction areas, rights-of-way within the proposed project site and water line extension site and move all desert tortoise found within those areas to an area just outside the temporary desert tortoise exclosure fencing, prior to the start of construction activities (*i.e.*, grubbing, grading, trenching) to ensure maximum avoidance of impacts to desert tortoise and their burrows. All construction staging areas will be enclosed by temporary desert tortoise exclusion fencing and cleared of desert tortoise prior to staging of construction equipment or vehicles.

An authorized biologist will monitor removed desert tortoises and will remove any additional desert tortoises encountered during construction for both the Facility and water line extension. The authorized biologist will have the authority to halt construction activities that have the potential to impact a desert tortoise until the desert tortoise can be moved. Desert tortoises encountered during construction will be removed and relocated in accordance with the Translocation Program.

Speed limits of 20 miles per hour (mph) will be posted and strictly enforced within the project construction area for the entire construction period. However, should the air temperature rise above 35°C (95°F) at 5 centimeters above the ground surface, an authorized biologist will be allowed to suspend the 20 mph speed limit for that day, or until the air temperature falls to 35°C (95°F) or below.

Firearms and pets will be prohibited within the proposed project site.

Dust control measures will be implemented on access roads and construction areas.

Common Raven Management Plan

The following measures will be implemented to prevent an increase in the common raven (*Corvus corax*) population in the vicinity of the proposed project site and to decrease the attractiveness of the proposed project site to common ravens.

Hyundai and the City will implement a trash and litter management program that reduces the availability of solid waste. Trash receptacles on site will be covered with a solid lid at all times, and instructional information will be placed in public areas of the site to encourage proper disposal of trash.

Fencing at the project site will be designed to inhibit common ravens from using these structures as perch sites (Please see Preconstruction Measures for additional information).

Sources of standing water such as leaking faucets, irrigation lines, stock tanks, or car wash stations will be avoided and eliminated whenever possible, as these unnatural sources of water may attract common ravens.
Roadkill wildlife found within the project site will be immediately removed and properly disposed.

Anti-common raven measures, such as hazing, will be undertaken following construction, and other non-lethal measures will be undertaken to control the presence of common ravens that are thought to be preying on juvenile tortoises, including the removal of inactive common raven nests within and adjacent to the Facility. Any inactive common raven nest will be removed by a wildlife biologist approved by the Service and the California Department of Fish and Game.

Postconstruction Measures

Hyundai and the City will conduct postconstruction clearance and monitoring for any remaining desert tortoises beginning in the autumn following the initial clearance and translocation of all desert tortoises (except sequestered, clinically ill tortoises), thereby minimizing potential take. If the prior spring has poor forage and there is relatively no summer rain, the first annual postconstruction monitoring and clearance would be postponed until the next activity season when there has been sufficient rainfall for desert tortoises to be active. Post construction surveys will consist of surveys of the entire project site using 10-foot transect widths to assure 100 percent coverage. Any desert tortoise encountered during post-construction surveys will be processed in accordance with the Translocation Program. An authorized biologist will submit monitoring information to Service and Department within 30 days of the completion of the first year of post-construction monitoring, and annually thereafter. Performance of two consecutive post-construction surveys during the active period of desert tortoise with no desert tortoises discovered will be considered sufficient to declare the site free of tortoise. When the project site is declared free of desert tortoise, no more formal on-site monitoring for presence of desert tortoise or construction worker education will be deemed necessary. The authorized biologist will notify the Service and Department in writing within 2 weeks of confirming that the site is free of desert tortoise.

An authorized biologist will be on call to remove any desert tortoise encountered during project operation, following completion of initial clearance and translocation of desert tortoise. All regularly scheduled on-site personnel will be instructed, as part of the worker education program, on the protocol for contacting the authorized on-call biologist to remove any desert tortoise encountered in a work area.

Hyundai will maintain the permanent security/desert tortoise exclusion fencing and rain gauges, throughout the life of the project. Hyundai will inspect the security/desert tortoise exclusion fencing and rain gauges on a monthly to twice-monthly schedule during the first year following commencement of project construction, and monthly throughout the life of the project unless Service and Department concur that fence inspection may occur less frequently, and will replace or repair the fencing and gauges as necessary. An annual inspection report will be submitted to the Service and Department. A copy of the annual inspection will be retained on site and will be

available for inspection by the Service and Department within two working days of a request for review.

STATUS OF THE SPECIES

The desert tortoise is a large, herbivorous reptile found in portions of the California, Arizona, Nevada, and Utah deserts. It also occurs in Sonora and Sinaloa, Mexico. In California, the desert tortoise occurs primarily within the creosote (*Larrea tridentata*), shadscale (*Atriplex confertifolia*), and Joshua tree (*Yucca brevifolia*) series of Mojave desert scrub, and the lower Colorado River Valley subdivision of Sonoran desert scrub. Optimal habitat has been characterized as creosote bush scrub in which precipitation ranges from 2 to 8 inches, diversity of perennial plants is relatively high, and production of ephemerals is high (Luckenbach 1982, Turner 1982, Turner and Brown 1982, Schamberger and Turner 1986). Soils must be friable enough for digging of burrows, but firm enough so that burrows do not collapse. In California, desert tortoises are typically associated with gravelly flats or sandy soils with some clay, but are occasionally found in windblown sand or in rocky terrain (Luckenbach 1982). Desert tortoises occur in the California desert from below sea level to an elevation of 7,300 feet, but the most favorable habitat occurs at elevations of approximately 1,000 to 3,000 feet (Luckenbach 1982, Schamberger and Turner 1986).

Desert tortoises are most active in California during the spring and early summer when annual plants are most common. Additional activity occurs during warmer fall and winter days and occasionally after summer rain storms. Desert tortoises spend most of the remainder of the year in burrows, escaping the extreme conditions of the desert. Further information on the range, biology, and ecology of the desert tortoise can be found in Burge (1978), Burge and Bradley (1976), Hovik and Hardenbrook (1989), Luckenbach (1982), Weinstein *et al.* (1987), and Service (1994).

Food resources for desert tortoises are dependent on the availability and nutritional quality of annual and perennial vegetation, which is greatly influenced by climatic factors, such as the timing and amount of rainfall, temperatures, and wind (Avery 1998). In the Mojave Desert, these climatic factors are typically highly variable; this variability can limit the desert tortoise's food resources.

Desert tortoises will eat many species of plants. However, at any time, most of their diet consists of a few species (Avery 1998). Additionally, their preferences can changes during the course of a season and over several seasons (Avery 1998). Possible reasons for desert tortoises to alter their preferences may include changes in nutrient concentrations in plant species, the availability of plants, and the nutrient requirements of individual animals (Avery 1998). In Avery's (1998) study in the Ivanpah Valley, desert tortoises consumed primarily green annual plants in spring; cacti and herbaceous perennials were eaten once the annuals began to disappear. Medica *et al.* (1982 in Avery 1998) found that desert tortoises ate increased amounts of green perennial grass when annuals were sparse or unavailable; Avery (1998) found that desert tortoises rarely ate

perennial grasses. The introduction of nonnative low nutrient value plants has also exacerbated fire frequency which further degrades the habitat of the desert tortoise (Brooks 1999).

Desert tortoises can produce from one to three clutches of eggs per year. On rare occasions, clutches can contain up to 15 eggs; most clutches contain 3 to 7 eggs. Multi-decade studies of the Blanding's turtle (*Emydoidea blandingii*), which, like the desert tortoise, is long lived and matures late, indicate that approximately 70 percent of the young animals must survive each year until they reach adult size; after this time, annual survivorship exceeds 90 percent (Congdon *et al.* 1993). Research has indicated that 50 to 60 percent of young desert tortoises typically survive from year to year, even in the first and most vulnerable year of life (Congdon *et al.* 1993). We do not have sufficient information on the demography of the desert tortoise to determine whether this rate is sufficient to maintain viable populations; however, it does indicate that maintaining favorable habitat conditions for small desert tortoises is crucial for the continued viability of the species.

Desert tortoises typically hatch from late August through early October. At the time of hatching, the desert tortoise has a substantial yolk sac; the yolk can sustain them through the fall and winter months until forage is available in the late winter or early spring. However, neonates will eat if food is available to them at the time of hatching; when food is available, they can reduce their reliance on the yolk sac to conserve this source of nutrition. Neonate desert tortoises use abandoned rodent burrows for daily and winter shelter, which are often shallowly excavated and run parallel to the surface of the ground.

Neonate desert tortoises emerge from their winter burrows as early as late January to take advantage of freshly germinating annual plants; if appropriate temperatures and rainfall are present, at least some plants will continue to germinate later in the spring. Freshly germinating plants and plant species that remain small throughout their phenological development are important to neonate desert tortoises because their size prohibits access to taller plants. As plants grow taller during the spring, some species become inaccessible to small desert tortoises.

Neonate and juvenile desert tortoises require approximately 12 to 16 percent protein content in their diet for proper growth. Desert tortoises, both juveniles and adults, seem to selectively forage for particular species of plants with favorable ratios of water, nitrogen (protein), and potassium. The potassium excretion potential model (Oftedal 2001) predicts that, at favorable ratios, the water and nitrogen allow desert tortoises to excrete high concentrations of potentially toxic potassium, which is abundant in many desert plants. Oftedal (2001) also reports that variation in rainfall and temperatures cause the potassium excretion potential index to change annually and during the course of a plant's growing season. Therefore, the changing nutritive quality of plants, combined with their increase in size, further limits the forage available to small desert tortoises to sustain their survival and growth.

The ecological requirements and behavior of neonate and juvenile desert tortoises are substantially different than those of subadults and adults. Smaller desert tortoises use abandoned rodent burrows, which are typically more fragile than the larger ones constructed by adults.

They are active earlier in the season. Small desert tortoises rely on smaller annual plants with greater protein content to be able to gain access to food and to grow.

Disease is one of the main threats identified in the listing of the desert tortoise, specifically upper respiratory tract disease (URTD). *Mycoplasma agassizii* has been identified as a cause of URTD. The transmission of *M. agassizii* is believed to be via direct contact with an infected tortoise (Brown *et al.* 2003). *M. agassizii* can only live outside the tortoise briefly (seconds) and a limited experimental study with gopher tortoises (*G. polyphemus*) suggested that it is unlikely to persist on objects or in burrows (McLaughlin 1997 *in* Brown *et al.* 2003). Desert tortoises are believed to be contagious during periods of acute phases, when they have clinical signs (Brown *et al.* 2003). Such signs include a mucous nasal discharge, palpebral edema, wheezing, moist nares or eyes, conjunctivitis, and lethargy. Schumacher *et al.* (1997) observed that positive clinical signs had a high statistical correlation with positive serology (*i.e.*, exposure to *M. agassizii*). A mucous nasal discharge was the clinical sign that was the most reliable predictor that desert tortoises were seropositive, although it could be caused by other pathogens. Other clinical signs were far more subjective, were potentially present for other reasons, and reduced the statistical predictability of positive serology. Positive serology [*i.e.*, a sufficient level of *M. agassizii*-specific antibodies to be detectable by an enzyme-linked immunosorbent assay (ELISA)] indicates that a desert tortoise has been exposed to *M. agassizii* (Schumacher *et al.* 1993). It does not, however, indicate whether the desert tortoise currently hosts the organism. Evidence of an active infection by *M. agassizii* is currently diagnosed by cultures and polymerase chain reaction (PCR).

Off highway vehicle recreation has been identified as a cause of desert tortoise mortality and injury. Desert tortoises can be struck by vehicles that are driving on paved and unpaved roads and cross country (Boarman and Sazaki 1996). Destruction of burrows by cross country travel can cause mortality or injury by trapping desert tortoises inside the burrows or desert tortoises find them unavailable when they are needed to escape predation or extreme weather conditions. In general, cross country travel can cause substantial impacts because of the presence of burrows and the difficulty in detecting and avoiding desert tortoises and their burrows. Hatchling desert tortoises are the most difficult individuals to detect and avoid while riding through roadless areas. Unauthorized recreation outside of designated play areas is common throughout the range of the desert tortoise.

Studies since the publication of the recovery plan have shown that cattle grazing has a negative effect on the ecology and behavior of the desert tortoise. During seasons with low rainfall and thus low plant productivity, cattle grazing causes desert tortoises to change dietary intake resulting in a change in the behavior and nutrition of the desert tortoise (Avery 1998). Desert tortoises spend more time foraging in areas that are grazed where the high quality forage is selectively removed by cattle resulting in a lower nutritional intake by desert tortoises (Avery 1998). The desert tortoise is dependent on the quality and quantity of forage for growth, reproductive vigor, and juvenile survivorship. Cattle trampling resulting in destruction of actively used desert tortoise burrows has been reported to cause desert tortoises to remain above ground overnight increasing the time exposed to elements and nocturnal predators (Avery and Neibergs 1997). Sheep grazing also is a land use with major conflicts with desert tortoise and

has been discussed extensively in a previous biological opinion describing similar effects (Fish and Wildlife Service 1991).
The Mojave population of the desert tortoise includes those animals living north and west of the Colorado River in the Mojave Desert of California, Nevada, Arizona, southwestern Utah, and in the Colorado Desert in California. On August 4, 1989, the Service published an emergency rule listing the Mojave population of the desert tortoise as endangered (54 *Federal Register* 32326). In its final rule, dated April 2, 1990, the Service determined the Mojave population of the desert tortoise to be threatened (55 *Federal Register* 12178). The Service designated critical habitat for the desert tortoise in portions of California, Nevada, Arizona, and Utah in a final rule, published February 8, 1994 (59 *Federal Register* 5820).

The recovery plan for the desert tortoise is the basis and key strategy for recovery and delisting of the desert tortoise. The plan divides the range of the desert tortoise into six distinct population segments or recovery units and recommends the establishment of 14 desert wildlife management areas throughout the recovery units. Within each desert wildlife management area, the recovery plan recommends implementation of reserve level protection of desert tortoise populations and habitat, while maintaining and protecting other sensitive species and ecosystem functions. The design of desert wildlife management areas should follow accepted concepts of reserve design. As part of the actions needed to accomplish recovery, land management within all desert wildlife management areas should restrict human activities that negatively affect desert tortoises (Service 1994).

The desert tortoise was listed in response to loss and degradation of habitat caused by numerous human activities including urbanization, agricultural development, military training, recreational use, mining, and livestock grazing. The loss of individual desert tortoises to collection by humans for pets or consumption, collisions with vehicles on paved and unpaved roads, and mortality resulting from diseases also contributed to the Service's listing of this species.

Populations of the desert tortoise have continued to decline since it was listed as threatened. Most notably, declines have been documented in previously stable or increasing study plots in the Fenner, Ward, and Chemehuevi valleys since 1994 when the recovery plan was published (Berry 1999, Berry 2000, Berry et al. 2001). Documented declines have been reported to be as much as 84 percent in Chemehuevi Valley (Berry 1999) and 95 percent in Goffs (Berry 2000). Recent declines have been attributed to multiple factors, including: crushing by vehicles along paved and dirt roads, predation by common ravens, trampling and overgrazing by livestock, attacks and predation by feral dogs, collecting, upper respiratory tract disease, shell and metabolic diseases, elevated levels of toxicants, and habitat degradation and alteration from many sources (Lovich and Bainbridge 1999, Berry et al. 2001, Boarman 2002). Recent information suggests the western Mojave area, including the Fort Irwin area, has been experiencing population declines (Ed LaRue, pers. comm West Mojave Plan biologist, Bureau 2003)

ENVIRONMENTAL BASELINE

The proposed project site supports three common Mojave Desert plant communities: desert saltbush scrub, Mojave creosote bush scrub, and Joshua tree woodland. Mojave creosote bush scrub is the dominant plant community within the area. The project area is included in the Bureau's designated Category III desert tortoise habitat (Spang *et al.* 1988). The Bureau's category designations only apply to Public Lands; intermingled private lands do not carry a category designation. Category III lands are defined as areas that have desert tortoise populations that are stable or decreasing, desert tortoise densities are low to medium, and the habitat is not identified as essential for maintenance of viable populations.

A cursory list of plant species at the project site includes: creosote bush (*Larrea tridentata*), Joshua tree (*Yucca brevifolia*), four-wing saltbush (*Atriplex canescens*), saltbush (*A. polycarpa*), rabbit brush (*Chrysothamnus nauseosus* ssp. *mohavensis*), winter fat (*Krascheninnikovia lanata*), hopsage (*Grayia spinosa*), flat-topped buckwheat (*Eriogonum deflexum*), birdnest buckwheat (*E. nidularium*), California buckwheat (*E. fasciculatum*), desert trumpet (*E. inflatum*), prince's plume (*Stanleya pinnata*), Mormon tea (*Ephedra nevadensis*), cheesebush (*Hymenoclea salsola*), fiddleneck (*Amsinckia tessellata*), Mediterranean grass (*Schismus arabicus*), storksbill (*Erodium cicutarium*), cholla (*Opuntia* sp.), spiny boxthorn (*Lycium cooperi*), cryptantha (*Cryptantha micrantha*), yellow pepper grass *(Lepidium flavum*), blazing star (*Mentzelia* sp.), goldfields (*Lasthenia californica*), wild rhubarb *(Rumex hymenosepalus*), saltgrass (*Distichlis spicata*), horsebush (*Tetradymia stenolepis*), thistle sage (*Salvia carduacea*), Mojave woolly-star (*Eriastrum densifolium* ssp. *mohavense*), Indian rice grass (*Achnatherum hymenoides*), and Mojave aster (*Xylorhiza tortifolia* var. *tortifolia*).

Desert Saltbush Scrub

Desert saltbush scrub is the primary plant community, accounting for 2,019 acres (approximately 46 percent) of the proposed project site (Sapphos 2004). Characteristic plant species of the desert saltbush scrub plant community that were identified at the proposed project site include saltbush, hop-sage, burrobush, California buckwheat, and saltgrass. This plant community is usually characterized by low shrubs 0.3 to 1 meter in height. Plants are widely spaced with bare ground between, and stands are typically dominated by *Atriplex polycarpa*. Several undrained depressions surrounded by saltbrush scrub occur on the western portion of the proposed project site that are devoid of perennial vegetation. Plant species typical of vernal pools were discovered in the spring of 2003. Alkali plagiobothrys (*Plagiobothrys leptocladus*) was found commonly in the 'pools' and is an indicator of alkali soils. Valley pineapple weed (*Chamomilla occidentalis*) is typically found near the edges of salt marshes, undisturbed alkali flats, and in vernal pools from the central valley of California; its discovery on site is a unique biological occurrence and an indication of high quality habitat. There are several low drainage areas where there is an alkaline crust indicative of alkali sink habitat with appropriate conditions for occurrences of Hoover's woolystar (*Eriastrum hooveri*), a federally listed threatened species that was recently delisted; however, there were no focused surveys for this species. Another regionally rare plant species was discovered in these sink habitats in 2003 (Saphos 2003); the Barstow wooly sunflower (*Eriophyllum mohavense*) is a West Mojave Desert endemic. This discovery represents a western range extension. This species is a covered species included in the

draft West Mojave Plan; A Habitat Conservation Plan and California Desert Conservation Area Plan Amendment released in May of 2003.

Mojave Creosote Bush Scrub

Mojave creosote bush scrub is a secondary plant community, accounting for 1,927 acres (approximately 44 percent) of the proposed project site (Saphos 2003). Plant species identified on site that are representative of the Mojave creosote bush scrub community include creosote, cheesebush, burrobush (*Ambrosia dumosa*), cholla, hopsage, Mormon tea, and saltbush. Mojave creosote bush scrub is the dominant plant in the Mojave Desert at elevations below 3,000 to 4,000 feet. This plant community is characterized by shrubs 0.5 to 3 meters in height and widely spaced with bare ground between plants.

Joshua Tree Woodland

Joshua tree woodland is a secondary plant community, accounting for 332 acres (approximately 8 percent) of the proposed project site (Sapphos 2003). Characteristic plant species of the Joshua tree woodland plant community that were identified within the proposed project site include Joshua tree, Mormon tea, California buckwheat, creosote, spiny boxthorn, and rabbit brush. The Joshua tree woodland plant community is characteristic of well drained gentle alluvial slopes in the Mojave Desert, typically at elevations between 2,500 and 5,000 feet. Joshua tree woodland is a state-designated sensitive plant community, but is not a listed plant species. Joshua tree woodland is a community of open woodland with numerous shrub species between 1 and 4 meters in height. During most of the year, little or no understory is present.

Disturbed Areas

A network of dirt roads crosses the property, accounting for 62 acres (approximately 1 percent) of the proposed project site. Field survey observations also documented other signs of disturbance by humans, including scattered shotgun shells and bullet casings, trash, abandoned camp sites, abandoned automobiles and sheep grazing. Additionally, signs of historical military uses are found throughout the site, including ammunition casings and at least one aircraft crash site. Representatives of Edwards Air Force Base Explosive Ordinance Disposal Unit performed a site assessment on September 12, 2002, and determined that all ordnance observed by the unit were “dummy” rounds used for targeting and contained no explosives. Therefore, there are no anticipated impacts to biological resources from unexploded ordnance.

Desert Tortoise

During an October 2003 survey for a desert tortoise disease study on the Hyundai project site, 19 adults and 1 juvenile desert tortoise were located by a team of about 25 desert tortoise biologists. The entire proposed project site was surveyed by walking transects with a five-meter spacing between biologists. All desert tortoises were evaluated for health and several were outfitted with transmitters. The biologists in charge of this survey estimate that the proposed project site contains about 30 desert tortoises.

In the West Mojave Desert, the desert tortoise has experienced significant declines in population numbers since 1988. In the Fremont Valley which is just north of California City, more than 200 desert tortoises were located on a one square mile study plot in 1981 (Berry 1982). In 2003, the Hyundai project site is approximately six square miles with a total density estimate of 30 desert tortoises.

Compensation/Translocation Lands

The compensation/translocation lands are located in the West Mojave Desert within proximity to the Facility. At these lands the habitat is dominated by mixed creosote bush scrub with spiny hopsage and winter fat. This habitat supports both desert tortoise and Mojave ground squirrel. The land is gently rolling with coarse gravel to a fine sand substrate. Habitat quality is considered comparable to the test track lands and will improve with active management for the desert tortoise (*e.g*. removal of sheep grazing and off-road vehicle use through fencing). The lands are not adjacent to or near a major highway. The lands have been identified as important for the expansion of the Desert Tortoise Research Natural Area. Lands targeted for the translocation study are adjacent to the Department's Fremont Valley Ecological Reserve which is managed for both desert tortoise and Mojave ground squirrel.

EFFECTS OF THE ACTION

Issuance of the ITPs will directly and indirectly affect approximately 30 desert tortoises within the project area. It will also indirectly affect desert tortoises located immediately adjacent to the project area. The translocation program of the proposed action will directly and indirectly affect desert tortoises at the translocation site and those at the control site. The proposed action will result in the removal of 4526.5 acres of occupied desert tortoise habitat. However, it will result in the acquisition of 3386.5 acres of desert tortoise habitat that will be managed for the desert tortoise in perpetuity.

Potential direct effects to the desert tortoise that may result from construction of the proposed Facility at the project site include injury or mortality to all size classes of desert tortoises from crushing by construction and access vehicles and heavy equipment. Occupied and unoccupied burrows of desert tortoises may be collapsed by these vehicles and heavy equipment, and desert tortoise eggs may also be crushed. Other potential direct effects from the operation of the Facility include injury and mortality to eggs and desert tortoises not found during translocation efforts. The injury and mortality would result from crushing by vehicles and equipment during the operation and maintenance of roadways, tracks, buildings, and infrastructure at the Facility. Adverse physiological effects to desert tortoise would occur from their capture to move them from the path of vehicles and heavy equipment. These include stress from handling and loss of stored water in their bladders through urination, if handled improperly. This stored water is important to desert tortoise to help them survive dry seasons and years.

Indirect effects at the proposed project site include destruction and modification of desert tortoise habitat used for feeding, breeding, and shelter from the establishment of roadways, tracks, buildings, and other above ground and underground structures and support facilities. Fragmentation of desert tortoise habitat used for feeding, breeding, and shelter would occur by spatially distributing approximately 850 acres of the Facility's footprint across 4400 acres of the project site.

Desert tortoises immediately adjacent to and those whose home ranges straddle the boundary of the proposed project may lose portions of their home ranges that they use for foraging and shelter locations. Some may lose past and future mates. Thus, the reproductive potential for these desert tortoise may be reduced.

The translocation study will affect three desert tortoise population cohorts. All three cohorts are part of the western limits of distribution of the west Mojave population of the desert tortoise. The largest unit comprises the project site animals and will represent home ranges that are spread over approximately seven square miles. The translocation site will include home ranges of animals in a two square mile area and the control site will include home ranges of approximately 15 animals. The translocation study will include placement of radio transmitters on all three population cohorts. Radio transmitters will be epoxied to the carapace of the animals and may affect those animals in several ways. The process of placing the transmitter on a desert tortoise requires handling for about 30 minutes. This handling places physiological stress on the desert tortoise moving them around in ways to which they are not accustomed. They exhibit a defensive behavior and withdraw into their shell. This handling may result in the voiding of their bladder reducing their water reserve.

The transmitters can impede each animal's ability to negotiate terrain and burrows. The transmitters may also increase the vulnerability of animals to predation by affecting their ability to successfully maneuver during escape and evasion situations. Transmitters may interfere with male-male combat during mating season. A desert tortoise with a transmitter that has flipped over has greater difficulty righting itself. If unsuccessful in righting itself in a short period of time, the desert tortoise will die from exposure to predation, weather elements, or crushing of the lungs by other internal organs. The weight of the transmitter may cause additional stress to the desert tortoise in that it must carry up to an additional 10 percent of its body weight for four years. This places additional physiological demands on the desert tortoise by using more food and water to transport this additional weight.

The translocated and control desert tortoises will also be subjected to blood tests and nasal lavage tests. This activity will create physiological stress for the desert tortoise by restraining the animals and placing a needle in the brachial artery or jugular vein to withdraw blood and flushing a solution into the nares and collecting the exudate.

Potential effects to translocated desert tortoises include physiological stress from handling during translocation to prevent mortality or injury from construction activities; reduction in or temporary curtailment of reproduction if courtship and mating behavior of free-ranging tortoises at the translocation site if modified by the translocation of desert tortoises; spread of disease between host and translocated animals; increased risk of predation if translocated desert tortoises are unable to find cover or appropriate burrow habitat in a timely manner; increased susceptibility of the translocated and host desert tortoises to disease caused by stress from translocation where competition with the host population and/or adaptation to new and unfamiliar territory.

Effects to host desert tortoises are similar to those of the translocated desert tortoises with respect to mating and reproduction, disease transmission, and disease outbreak.

Implementation of the Hyundai HCP will remove 4526.5 acres of occupied desert tortoise habitat in the West Mojave Desert. This habitat has been classified as Category III desert tortoise habitat by the Bureau and is not within or adjacent to a recovery unit or Desert Wildlife Management Area (DWMA). Development and fencing of the proposed project site will also fragment existing habitat. The project site is surrounded by desert tortoise habitat. The habitat to the south of the proposed project is already fragmented by State Highway 58. This highway also serves as a barrier to the movement of tortoises to and from habitat located south of the project site. Additional effects include impeding movement of desert tortoise and gene flow between those desert tortoise located in habitat west of the proposed action with those located in habitat east of the proposed action. The proposed action does not block movement and gene flow because of the presence of suitable desert tortoise habitat north of the project site.

The proposed compensation of 3386.5 acres of desert tortoise habitat will have a beneficial effect as it will result in the enhancement and management of this habitat for the benefit of the desert tortoise in perpetuity. The location of the compensation lands is in an area identified for future acquisition of and management for the desert tortoise. This area is adjacent to the Fremont-Kramer DWMA and critical habitat. Thus the compensation lands will contribute to long-term conservation of the species by adding additional lands to this management unit and reducing the fragmentation in land ownership and use that currently exists.

There is low potential that the proposed action would result in direct mortality or injury to any individual desert tortoises because of the implementation of the protective measures proposed by Hyundai. Therefore, the proposed activities are not likely to appreciably affect or reduce the ability of the desert tortoise to survive and recover.

CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, tribal, local or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act. We are unaware of any non-federal action in the action area that is reasonably certain to occur.

CONCLUSION

After reviewing the current status of the desert tortoise, the environmental baseline for the action area, the effects of the proposed action, including all measures proposed to avoid, minimize, and mitigate adverse effects and the cumulative effects, it is the Service's biological opinion that the issuance of the incidental take permits to Hyundai and the City pursuant to section 10(a)(1)(B) of the Act is not likely to jeopardize the continued existence of the desert tortoise. We have reached this conclusion for the following reasons:

1. Measures are included as part of the proposed action to avoid or minimize direct injury or mortality to desert tortoises at the project site.

2. The area to be directly affected constitutes a small portion of the desert tortoise's habitat.

3. The HCP includes off-site compensation for the loss of desert tortoise habitat at the project site with requirements for management of compensation lands for the benefit of desert tortoise in perpetuity.

4. The HCP includes provisions for the implementation and management of the translocation site for desert tortoise.

5. The area to be developed is outside critical habitat and not within a recovery unit.

INCIDENTAL TAKE STATEMENT

Section 9(a)(1) of the Act and federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harass is defined by the Service as intentional or negligent actions that create the likelihood of injury to listed species by annoying it to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this incidental take statement.

Hyundai and the City's HCP and its associated documents identify anticipated impacts to the desert tortoise that are likely to result from the proposed action and the measures that are necessary and appropriate to minimize those impacts. All conservation measures described in the proposed HCP together with terms and conditions described in the associated IA and any section 10(a)(1)(B) permit or permits issued with respect to the proposed HCP, are hereby incorporated by reference as reasonable and prudent measures and terms and conditions within this Incidental Take Statement pursuant to 50 CFR 402.14(i). Such terms and conditions are non-discretionary and must be undertaken for the exemptions under section 10(a)(1)(B) and section 7(o)(2) to apply. If the Permittees fail to adhere to these terms and conditions, protective coverage of the section 10(a)(1)(B) permit and section 7(o)(2) may lapse. The amount or extent of incidental take anticipated under the proposed HCP, associated reporting requirements, and provisions for disposition of dead or injured animals are described in the HCP and its accompanying section 10(a)(1)(B) permits.

Extent of Incidental Take

Hyundai proposes to permanently remove all desert tortoise from 4,498 acres of desert tortoise habitat at the project site. Given the minimization measures included by the HCP, we anticipate incidental take in the form of harm to the desert tortoise through the destruction, modification, or fragmentation 4,498 acres of occupied desert tortoise habitat. All desert tortoises that occur on the proposed project site will be captured and moved to an approved translocation site or, if showing clinical signs of disease, a holding site on the Hyundai property. The Service estimates that 20 to 30 desert tortoises may be present which would be captured and translocated. The Service also estimates that up to 54 desert tortoises will be captured and affixed with radio transmitters. These 54 animals include the translocated desert tortoise described above.

Take may also occur in the form of death or injury to a few desert tortoises as a result of construction, operation, and maintenance of the Facility, and implementation of the translocation program.

The reasons for this level of take from mortality or injury are that despite the best survey efforts, desert tortoises are difficult to locate. Desert tortoise are fossorial animals, spending less than 10 percent of their time above ground. The cryptic coloration and small size of hatchling and young desert tortoises makes them more difficult to find than adults. Desert tortoises are mobile, not entirely predictable in their activity patterns, and can dig new burrows in previously inspected areas over time. Translocation efforts may also result in death. For these reasons, we are unable to anticipate precisely the number of desert tortoises that may be taken (e.g. killed, injured, or captured) as a result of the proposed project.

Effect of the Take

For the reasons stated in the analyses of the proposed project's effects, the Service determined that the level of incidental take specified in the effects of the action and this Incidental Take Statement is not likely to result in jeopardy to the desert tortoise. No critical habitat is within the proposed project site.

Reasonable and Prudent Measures and Terms and Conditions

The proposed HCP and its associated documents clearly identify anticipated impacts to affected species likely to result from the proposed taking and the measures that are necessary and appropriate to minimize those impacts. All conservation measures described in the proposed HCP, together with terms and conditions described in the associated Implementing Agreement (IA) and any section 10(a)(1)(B) permit or permits issued with respect to the proposed HCP, are hereby incorporated by reference as reasonable and prudent measures and terms and conditions within this Incidental Take Statement pursuant to 50 CFR 402.14(i). Such terms and conditions are non-discretionary and must be undertaken for the exemptions under section 10(a)(1)(B) and section 7(o)(2) to apply. If the Applicants fail to adhere to these terms and conditions, protective coverage of the section 10(a)(1)(B) permit and section 7(o)(2) may lapse.

Reporting Requirements

The HCP requires Hyundai and the City to submit reports to the Service during various phases of the project including the Translocation Program and acquisition of compensation lands. Please refer to the HCP and the IA for specific information on the types of reports and their due dates.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information. We offer the following conservation recommendations:

The Service should pursue available funding mechanisms to enlarge the acreage of desert tortoise compensation lands in the area east of the DTRNA for the long term enhancement and management of desert tortoise habitat.

Reinitiation

This concludes formal consultation on the issuance of a Permit to implement the HCP. As provided in 50 CFR § 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) The amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

If you have any questions regarding this consultation, please contact Judy Hohman of my staff at (805) 644-1766.

Attachment

REFERENCES CITED

Avery, H.W. 1998. Nutritional ecology of the desert tortoise (*Gopherus agassizii*) in relation to cattle grazing in the Mojave Desert. Ph.D. Dissertation, Department of Biology, University of California, Los Angeles. 158 pages.

Avery, H.W., and A.G. Neibergs. 1997. Effects of cattle grazing in the desert tortoise, *Gopherus agassizii*: nutritional and behavioral interactions. In: Proceedings: Conservation, Restoration, and Management of Tortoises and Turtles - An International Conference, pp. 13-20. New York Turtle and Tortoise Society.

Berry, K.H. 1982. State report - California. Proceedings of the 1982 Desert Tortoise Council Symposium, pp. 82-83.

Berry, K.H. 1999. Preliminary report from the 1999 spring survey of the desert tortoise long-term study plot in Chemehuevi Valley and Wash, California. Box Springs Field Station, Western Ecological Research Center, U.S. Geological Survey. Riverside, California.

Berry, K.H. 2000. Preliminary report on the spring survey of desert tortoises at Goffs permanent study plot. Box Springs Field Station, Western Ecological Research Center, U.S. Geological Survey. Riverside, California.

Berry, K.H., T. Goodlett, and K. Anderson. 2001. Recent declines in desert tortoise populations in eastern California: the Fenner and Chemehuevi Valleys. Abstract of paper presented at the Twenty-sixth Annual Meeting and Symposium of the Desert Tortoise Council. Http://www.deserttortoise.org/abstracts2001/2001abs6.html

Boarman, W.I. 2002. Threats to the desert tortoise: A critical review of the literature. Prepared for the Bureau of Land Management. Western Ecological Research Center, U.S. Geological Survey. Riverside, California. 86 pages.

Boarman, W.I., and M. Sazaki. 1996. Highway mortality in desert tortoises and small vertebrates: success of barrier fences and culverts. I*n* G. J. Evink, P. Garrett, D. Zeigler, and J. Berry (eds.), *Trends in addressing transportation related wildlife mortality. Proceedings of the transportation related wildlife mortality seminar*. Environmental Management Office, Department of Transportation, Tallahassee, Florida.

Brooks, M.L. 1999. Alien annual grasses and fire in the Mojave Desert. Madrono 46:13-19.

Brown, D.R., I.M. Schumacher, G.S. Laughlin, I.D. Wendland, M.B. Brown, P.A. Klein, and E.R. Jacobson. 2003. Application of diagnostic tests for mycoplasmal infections of desert and gopher tortoises with management recommendations. Chel. Conserv. Biol. 4(2):497-507.

Burge, B.L. 1978. Physical characteristics and patterns of utilization of cover sites by *Gopherus agassizii* in southern Nevada. Proceedings of the 1978 Symposium, Desert Tortoise Council.

Burge, B.L., and W.G. Bradley. 1976. Population density, structure and feeding habits of the desert tortoise, *Gopherus agassizii*, in a low desert study area in southern Nevada. Proceedings of the 1976 Symposium, Desert Tortoise Council.

Congdon, J.D., A.E. Dunham, and R.C. Van Loben Sels. 1993. Delayed sexual maturity and demographics of Blanding's turtles (Emydoidea blandingii): Implications for conservation and management of long-lived organisms. Conservation Biology 7:826-833.

Hovik, D.C., and D.B. Hardenbrook. 1989. Summer and fall activity and movements of desert tortoises in Pahrump Valley, Nevada. Abstract of paper presented at Fourteenth Annual Meeting and Symposium of the Desert Tortoise Council.

Karl, A.E. 2003. Desert Tortoise Translocation Program (November 2003)4. Appendix A IN Saphos 2003 Habitat Conservation Plan and Environmental Assessment for the Hyundai test track in California City, California.

Lovich, J.E., and D. Bainbridge. 1999. Anthropogenic degradation of the southern California desert ecosystem and prospects for natural recovery and restoration. Environmental Management 24:309-326.

Luckenbach, R.A. 1982. Ecology and management of the desert tortoise (*Gopherus agassizii*) in California. *In*: R.B. Bury (ed.). North American Tortoises: Conservation and Ecology. U.S. Fish and Wildlife Service, Wildlife Research Report 12, Washington, D.C.

Oftedal, O.T. 2001. Low rainfall affects the nutritive quality as well as the total quantity of food available to the desert tortoise. Abstract of paper presented at the Twenty-sixth Annual Meeting and Symposium of the Desert Tortoise Council. Http://www.deserttortoise.org/abstracts2001/2001abs29.html

Sapphos. 2003. Draft Environmental Assessment/Habitat Conservation Plan for the Hyundai Test Track in California City, California. July 15, 2003.

Sapphos. 2004. Final Environmental Assessment/Habitat Conservation Plan for the Hyundai Test Track in California City, California. January 6, 2004.

Schamberger, M., and F.B. Turner. 1986. The application of habitat modeling to the desert tortoise (*Gopherus agassizii*). Herpetologica 42(1):134-138.

Schumacher,I.M, D.B. Hardenbrook, M.B. Brown, E.R. Jacobson, and P.A. Klein. 1997. Relationship between clinical signs of upper respiratory tract disease and antibodies to *Mycoplasma agassizii* in desert tortoises fron Nevada. J. Wildl. Dis. 33(2):261-266.

Spang, E.F., G.W. Lamb, F. Rowley, W.H. Radtkey, R.R. Olendorff, E.A. Dahlem, and S. Slone. 1988. Desert tortoise habitat management on the public lands: a rangewide plan. U.S. Bureau of Land Management, Washington, D.C.

Turner, R.R. 1982. Mohave desertscrub. In: D.E. Brown (editor), Biotic communities of the American Southwest - United States and Mexico. Desert Plants 4(1-4) 157-168.

Turner, F.B., and D.E. Brown. 1982. Sonoran desertscrub. In: D.E. Brown (editor). Biotic communities of the American Southwest - United States and Mexico. Desert Plants 4(1-4):181-222.

U.S. Bureau of Land Management. 1999. The California Desert Conservation Plan; as amended. U.S. Bureau of Land Management, Desert District, Riverside, California. 159 pages

U.S. Fish and Wildlife Service. 1991. Biological opinion for ephemeral sheep grazing in the Western Mojave and Northern Colorado deserts of California. Portland, Oregon. (6840 CA-932.5) (1-6-91-F-18).

U.S. Fish and Wildlife Service. 1994. Desert Tortoise (Mojave Population) Recovery Plan. Portland, Oregon.

Weinstein, M., K.H. Berry, and F.B. Turner. 1987. An analysis of habitat relationships of the desert tortoise in California. A report to Southern California Edison Company. Rosemead, California.